



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,406	09/26/2001	Peter G. Hebgen	SP01-274	3786

22928 7590 05/22/2003

CORNING INCORPORATED
SP-TI-3-1
CORNING, NY 14831

EXAMINER

SUCHECKI, KRISTYNA

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 05/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/965,406

Applicant(s)

HEBGEN ET AL.

Examiner

Krystyna Suchecki

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☒ Claim(s) 19, 31 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: Page 16 references three segment designs in line 13, but four are taught and listed in Table 1. Appropriate correction is required.

Claim Objections

2. Claims 19 and 31 are objected to because of the following informalities: Claim 19 references "a pin array of less than 7dB". Pin arrays are generally described in terms of their pin spacing, but, if the array is intended to induce a specific dB loss, wording must be present to indicate this and allow adequate comparison of the array to other art devices. Claim 31 is objected to for a typographical error with the use of "a an outer radius". Appropriate correction is required.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

4. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

5. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1-2, 4-24 and 29-34 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 2-3, 5-25, 31-

Art Unit: 2882

33 and 35-37 of copending Application No. 10/238100. Although the conflicting claims are not identical, they are not patentably distinct from each other because the ranges claimed are so close, there is no patentable distinction between the claims. Claim 2 of the copending case is a subset of claim 1, and the combination creates a copy of claim 1 of the present application. This is evidence that there is no patentable distinction between applications.

7. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

8. Claims 1-2, 4-24 and 29-34 of this application conflict with claims 2-3, 5-25, 31-33 and 35-37 of Application No. 10/238100. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1, 4-15, 17-19, 23-25 and 27-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Gruner-Nielsen (US 6,490,398).

11. Regarding Claim 1, Gruner-Nielsen teaches a dispersion compensating optical fiber, comprising: a segmented core having at least three segments, the refractive index profile being selected to provide total dispersion at 1595 nm between about -95 ps/nm-km and -225 ps/nm-km; and a dispersion slope more negative than -1.0 ps/nm² -km at 1595 nm (Figure 4 and Column 8, Fiber C).
12. Regarding Claim 4, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 1 wherein at least one of the segments has an alpha-profile where alpha is between about 2.0 and 2.2 (Table Column 9).
13. Regarding Claim 5, Gruner-Nielsen teaches the dispersion compensating optical fiber claim 1 wherein Delta_1% (now referred to as A1%) is positive, Delta_2% (now referred to as A2%) is negative, and Delta_3% (now referred to as A3%) is positive (Table of Column 9).
14. Regarding Claim 6, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 5 further comprising a central core segment having a positive A1% greater than 1.5%, a moat segment adjoining the central core segment and having a negative A2% more negative than -0.4%, and a ring segment adjoining the moat segment having a positive A3% greater than 0.7% (Table of Column 9).
15. Regarding Claim 7, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 5 wherein a volume of the central core segment is in the range of about 9 units and 11 units, and a volume of the ring segment is in the range of about 40 units to 47 units (Table of Column 9 and Column 6, lines 58-61).
16. Regarding Claim 8, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 1 further comprising: a central core segment having a A1% in the range of about 1.5% to

2.0% and a radius R1, in the range of about 1.5 μ m to 2.0 μ m, a moat segment having a A2% in the range of about -0.3% to -0.9% and a radius R2 in the range of about 4.5 μ m to 6.5 μ m, and a ring segment having a A3% in the range of about 0.6% to 1.1%, a mid point radius R3 in the range of about 6.0 μ m to 8.0 μ m (Tables of Columns 8 and 9 and Claim 2).

17. Regarding Claim 9, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 1 further comprising: a central core segment having a positive A1% greater than 1.7%, a moat segment adjoining the central core segment having a negative A2% more negative than -0.5%, and a ring segment adjoining the moat segment having a positive A3% greater than 0.8% (Table of Column 9).

18. Regarding Claim 10, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 1 further comprising a volume of the ring segment greater than about 40 units (Table of Column 9 and Column 6, lines 58-61).

19. Regarding Claim 11, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 1 further comprising a ring segment having A3% of greater than 0.7% (Table of Column 9).

20. Regarding Claim 12, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 11 further comprising a A3% of the ring segment between 0.7% and 1.0% and a midpoint radius R3 between 6.5 μ m and 8.0 μ m (Tables of Columns 8 and 9 and Claim 2).

21. Regarding Claim 13, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 1 further comprising a central core segment having a A1% in the range of about 1.7% to 1.9% and a radius R1, in the range of between about 1.7 μ m to 1.9 μ m, a moat segment having a A2% in the range of about -0.5% to -0.7% and an radius R2 of between 5.0 μ m and 6.0 μ m, and a

ring segment having a A3% in the range of about 0.75% to 0.9%, a midpoint radius R3 in the range of about 6.5 μm to 8.0 μm , and a width in the range of about 0.7 μm to 1.2 μm (Tables of Columns 8 and 9 and Claim 2).

22. Regarding Claim 14, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 1 further including a kappa value defined as the dispersion at 1595 nm divided by the dispersion slope at 1595 nm of between 90 nm and 110 nm (Table Column 8).

23. Regarding Claim 15, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 1 further including a kappa value defined as the dispersion at 1595 nm divided by the dispersion slope at 1595 nm of between 90 nm and 105 nm (Column 8).

24. Regarding Claim 17, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 1 further comprising a range of kappa values defined as the dispersion at a particular wavelength divided by the dispersion slope at the particular wavelength over the range of 1570 nm to 1620 nm of between 80 nm to 155 nm (Column 8).

25. Regarding Claim 18, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 17 further comprising a range of kappa values defined as the dispersion at a particular wavelength divided by the dispersion slope at the particular wavelength over the range of 1570 nm to 1620 nm of between 85 nm to 110 nm (Column 8).

26. Regarding Claim 19, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 1 further comprising a pin array of less than 7 dB at 1595 nm (Column 5, lines 34-40).

27. Regarding Claim 23, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 1 further comprising an dispersion slope over the wavelength range of between about 1570 nm and 1620 nm of between $-0.7 \text{ ps/nm}^2 \text{ -km}$ and $-2.5 \text{ ps/nm}^2 \text{ -km}$ (Column 8).

28. Regarding Claim 24, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 23 further comprising an dispersion slope over the wavelength range of between about 1570 nm and 1620 nm of between $-1.0 \text{ ps/nm}^2 \text{ -km}$ and $-1.8 \text{ ps/nm}^2 \text{ -km}$ (Column 8).
29. Regarding Claim 25, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 1 further comprising an dispersion slope at 1595 nm of between $-1.0 \text{ ps/nm}^2 \text{ -km}$ and $-2.5 \text{ ps/nm}^2 \text{ -km}$ (Column 8).
30. Regarding Claim 27, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 1 further comprising an dispersion slope at 1595 nm more negative than $-1.2 \text{ ps/nm}^2 \text{ -km}$ (Column 8).
31. Regarding Claim 28, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 1 further comprising dispersion slope that is more negative than $-0.7 \text{ ps/nm}^2 \text{ -km}$ over the entire L-band from 1570 nm to 1620 nm (Column 8 and Figure 4).
32. Regarding Claim 29, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 28 further comprising a dispersion slope that is more negative than $-1.2 \text{ ps/nm}^2 \text{ -km}$ over the entire L-band from 1570 nm to 1620 nm (Column 8 and Figure 4).
33. Regarding Claim 30, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 1 further comprising: a central core segment having an outer radius R1, in the range of between about 1.5 μm and 2.0 μm , a moat segment having an outer radius R2 in the range of between about 4.5 μm and 6.5 μm , and a ring segment having a midpoint radius R3 in the range of between about 6.0 μm to 8.0 μm (Table Column 9).

Art Unit: 2882

34. Regarding Claim 31, Gruner-Nielsen teaches the dispersion compensating optical fiber of claim 30 further comprising an outer radius R4 of the ring segment in the range of between about 10 μm and 12 μm (Table Column 9 and Claim 2).

35. Regarding Claim 32, Gruner-Nielsen teaches an optical transmission system having a dispersion compensating optical fiber, wherein the dispersion compensating fiber comprises: a segmented core having at least three segments, the refractive index profile being selected to provide total dispersion at 1595 nm between about -95 ps/nm-km and -225 ps/nm-km; and a dispersion slope more negative than -1.0 ps/nm²-km at 1595 nm (Figure 4 and Column 8).

36. Regarding Claims 33-34, Gruner-Nielsen teaches the optical transmission system of claim 32 further comprising a non-zero dispersion shifted fiber coupled to the dispersion compensating fiber, understood to include nonzero dispersion shifted fibers having a dispersion slope of between about 0.065 and 0.08 ps/nm²-km at 1595 nm and wherein the non-zero dispersion shifted fiber has a dispersion of between about 6.5 and 8.5 ps/nm-km at 1595 nm (Column 5 lines 41-65 and Figure 7).

37. Claims 1-3, 16, 20-22, and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Okuno (US 6,501,892).

38. Regarding Claim 1, Okuno teaches a dispersion compensating optical fiber, comprising: a segmented core having at least three segments, the refractive index profile being selected to provide total dispersion at 1595 nm between about -95 ps/nm-km and -225 ps/nm-km; and a dispersion slope more negative than -1.0 ps/nm²-km at 1595 nm (Figure 10, C100).

39. Regarding Claim 2, Okuno teaches the dispersion compensating optical fiber of claim 1 wherein the total dispersion at 1595 nm is between about -110 ps/nm-km and -150 ps/nm-km (Figure 10, C100).
40. Regarding Claim 3, Okuno teaches the dispersion compensating optical fiber of claim 1 wherein the total dispersion is between about -80 ps/nm-km and -190 ps/nm-km over a wavelength range from about 1570 nm to 1620 nm (Figure 10, C100).
41. Regarding Claim 16, Okuno teaches the dispersion compensating optical fiber of claim 1 further including a kappa value defined as the dispersion at 1595 nm divided by the dispersion slope at 1595 nm of between 95 nm and 100 nm (Figure 10, C100).
42. Regarding Claim 20, Okuno teaches the dispersion compensating optical fiber of claim 1 further comprising a cutoff wavelength for a next higher order mode above LP01, the cutoff wavelength being less than 2025 nm (Third Embodiment).
43. Regarding Claim 21, Okuno teaches the dispersion compensating optical fiber of claim 1 further comprising an effective area at 1595 nm of greater than $15 \text{ } \mu\text{m}^2$ (Figures 18A-18B).
44. Regarding Claim 22, Okuno teaches the dispersion compensating optical fiber of claim 21 further comprising an effective area at 1595 nm of greater than $17 \text{ } \mu\text{m}^2$ (Figures 18A-18B).
45. Regarding Claim 26, Okuno teaches the dispersion compensating optical fiber of claim 1 further comprising an dispersion slope at 1595 nm of between $-1.2 \text{ ps/nm}^2 \text{ -km}$ and $-1.5 \text{ ps/nm}^2 \text{ -km}$ (Figure 9).

Art Unit: 2882

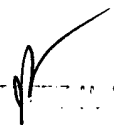
Conclusion

46. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krystyna Suchecki whose telephone number is (703) 305-5424. The examiner can normally be reached on M-F 8-6, with alternating Fridays off.

47. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

48. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.

ks
May 6, 2003


SUPERVISOR
TECHNICAL CENTER
MAY 6 2003